

IN THE CLAIMS

The following is a complete listing of the claims, and replaces all earlier versions and listings.

1-40. (Canceled)

41. (Previously Presented) A method of compressing data, wherein the data comprises a plurality of transform coefficients, and each transform coefficient is expressible in a format including a plurality of bit symbols, the format comprising a number of leading zero bit symbols and remaining bit symbols, the method comprising the steps of:

(a) entropy encoding a number representative of the number of leading zero bit symbols of a current transform coefficient based on a context of a number of transform coefficients or part thereof surrounding the current transform coefficient, said context being based on the number of non-zero transform coefficients or part thereof surrounding the current transform coefficient;

(b) coding the remaining bit symbols of the current transform coefficient; and

(c) processing another transform coefficient, not previously coded, in accordance with steps (a) and (b).

42. (Canceled)

43. (Currently Amended) A method as claimed in Claim ~~[[39]]~~ 41, further comprising the step of quantizing the transform coefficients.

44. (Previously Presented) A method as claimed in claim 41, wherein the representative number equals the number of leading zero bit symbols.

45. (Previously Presented) A method as claimed in claim 41, wherein said context is determined from an arrangement of surrounding transform coefficients.

46. (Previously Presented) A method as claimed in claim 45, wherein the surrounding transform coefficients are previously encoded transform coefficients.

47. (Canceled)

48. (Previously Presented) A method as claimed in claim 41, wherein said step of coding the remaining bit symbols includes copying the remaining bit symbols.

49. (Previously Presented) A method of compressing data, wherein the data comprises a plurality of transform coefficients, and each transform coefficient is expressible in a format comprising a plurality of bit symbols, the method comprising the steps of:

(a) entropy encoding one of the bit symbols, not previously entropy coded, of a current transform coefficient based on a context of a number of surrounding bit

symbols and on whether or not the most significant bit symbol of the current coefficient has been previously entropy coded, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient;

(b) repeating step (a) a predetermined number of times for the current transform coefficient; and

(c) processing another transform coefficient, not previously entropy coded, in accordance with steps (a) and (b).

50. (Canceled)

51. (Previously Presented) A method as claimed in claim 49, further comprising the step of quantizing the transform coefficients.

52. (Canceled)

53. (Previously Presented) A method as claimed in claim 49, wherein said context of surrounding bit symbols includes information as to whether or not a most significant bit of at least one transform coefficient spatially adjacent, to the current transform coefficient, has been encoded.

54. (Previously Presented) A method as claimed in claim 49, wherein the transform coefficients are represented in a bit-plane representation and the surrounding bit symbols are bit symbols in a current bit-plane.

55. (Previously Presented) A method as claimed in claim 41, wherein said entropy encoding is performed by an arithmetic coder.

56. (Previously Presented) A method as claimed 41, further comprising the step of Discrete Wavelet Transforming data to produce the plurality of transform coefficients.

57. (Currently Amended) A method of decompressing data, wherein the data once decompressed comprises a plurality of transform coefficients, and each transform coefficient is expressible in a format including a plurality of bit symbols, the format comprising a number of leading zero bit symbols and remaining bit symbols, the method comprising the steps of:

(a) entropy decoding an encoded number representative of the number of leading zero bit symbols of a current transform coefficient based on a context of a number of transform coefficients or part thereof surrounding the current transform coefficient, said context being based on the number of non-zero transform coefficients or part thereof surrounding the current transform coefficient;

(b) decoding the remaining bit symbols of the current transform coefficient; and

(c) processing generating another transform coefficient in accordance with steps (a) and (b).

58. (Canceled)

59. (Previously Presented) A method as claimed in claim 57, further comprising the step of inverse quantizing the transform coefficients.

60. (Previously Presented) A method as claimed in claim 57, wherein the representative number equals the number of leading zero bit symbols.

61. (Previously Presented) A method as claimed in claim 57, wherein said context is determined from an arrangement of surrounding transform coefficients.

62. (Previously Presented) A method as claimed in claim 61, wherein the surrounding transform coefficients are previously decoded transform coefficients.

63. (Canceled)

64. (Previously Presented) A method as claimed in claim 57, wherein said step of decoding the remaining bit symbols includes copying the remaining bit symbols.

65. (Currently Amended) A method of decompressing data, wherein the data once decompressed comprises a plurality of transform coefficients, and each transform coefficient is expressible in a format comprising a plurality of bit symbols, the method comprising the steps of:

(a) entropy decoding an encoded bit symbol of a current transform coefficient based on a context of a number of surrounding bit symbols and on

whether or not the most significant bit symbol of the current coefficient has been previously entropy decoded, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient;

(b) repeating step (a) a predetermined number of times for the current transform coefficient; and

(c) generating another transform coefficient in accordance with steps (a) and (b).

66. (Canceled)

67. (Previously Presented) A method as claimed in claim 65, further comprising the step of inverse quantizing the transform coefficients.

68. (Canceled)

69. (Previously Presented) A method as claimed in claim 65, wherein said context of surrounding bit symbols includes information as to whether or not a most significant bit of at least one transform coefficient spatially adjacent, to the current transform coefficient, is encoded or decoded.

70. (Previously Presented) A method as claimed in claim 65, wherein the transform coefficients are represented in a bit-plane representation and the surrounding bit symbols are bit symbols in a current bit-plane.

71. (Previously Presented) A method as claimed in claim 57, wherein said entropy decoding is performed by an arithmetic coder.

72. (Previously Presented) A method as claimed in claim 57, wherein further comprising the step of inverse Discrete Wavelet Transforming the transform coefficients.

73. (Previously Presented) An apparatus for compressing data, wherein the data comprises a plurality of transform coefficients and each transform coefficient is expressible in a format including a plurality of bit symbols, the format comprising a number of leading zero bit symbols and remaining bit symbols, the apparatus including:

first encoder means for entropy encoding a number representative of the number of leading zero bit symbols of a current transform coefficient based on a context of a number of transform coefficients or part thereof surrounding the current transform coefficient, said context being based on the number of non-zero transform coefficients or part thereof surrounding the current transform coefficient; and

second encoder means for encoding the remaining bit symbols of the current transform coefficient; and

processor means for processing another transform coefficient, not previously coded, in accordance with the operations of the first and second encoder means.

74. (Canceled)

75. (Previously Presented) An apparatus according to claim 73, wherein the apparatus further includes quantization means for quantizing the transform coefficients.

76. (Previously Presented) An apparatus as claimed in claim 73, wherein the representative number equals the number of leading zero bit symbols.

77. (Previously Presented) An apparatus as claimed in claim 73, wherein said context is determined from an arrangement of surrounding transform coefficients.

78. (Previously Presented) An apparatus as claimed in claim 77, wherein the surrounding transform coefficients are previously encoded transform coefficients.

79. (Canceled)

80. (Previously Presented) An apparatus as claimed in claim 73, wherein said second encoder means codes the remaining bit symbols by copying the remaining bit symbols.

81. (Previously Presented) An apparatus for compressing data, wherein the data comprises a plurality of transform coefficients, and each transform coefficient is expressible in a format comprising a plurality of bit symbols, the apparatus including:

entropy encoder means for entropy encoding one of the bit symbols, not previously entropy coded, of a current transform coefficient based on a context of a

number of surrounding bit symbols and on whether or not the most significant bit symbol of the current coefficient has been previously entropy encoded, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient;

repetition means for repeating the operation of the entropy encoder a predetermined number of times for the current transform coefficient; and

processor means for processing another transform coefficient in accordance with the operations of the entropy encoder means and repetition means.

82. (Canceled)

83. (Previously Presented) An apparatus as claimed in claim 81, wherein the apparatus includes quantizing means for quantizing the transform coefficients.

84. (Canceled)

85. (Previously Presented) An apparatus as claimed in claim 81, wherein said context of surrounding bit symbols includes information as to whether or not a most significant bit of at least one transform coefficient spatially adjacent, to the current transform coefficient, has been encoded.

86. (Previously Presented) An apparatus as claimed in claim 81, wherein the transform coefficients are represented in a bit-plane representation and the surrounding bit symbols are bit symbols in a current bit-plane.

87. (Previously Presented) An apparatus as claimed in claim 73, wherein said first encoder means is an arithmetic coder.

88. (Currently Amended) An apparatus as claimed in claim 73, wherein said apparatus further includes a transform means for Discrete Wavelet Transforming data to produce the plurality of ~~transforming~~ transform coefficients.

89. (Currently Amended) An apparatus for decompressing data, wherein the data once decompressed comprises a plurality of transform coefficients and each transform coefficient is expressible in a format comprising a plurality of bit symbols, the format comprising a number of leading zero bit symbols and remaining bit symbols, the apparatus including:

first decoder means for entropy decoding an encoded number representative of the number of leading zero bit symbols of a current transform coefficient based on a context of a number of transform coefficients or part thereof surrounding the current coefficient, said context being based on the number of non-zero transform coefficients or part thereof surrounding the current transform coefficient;

second decoder means for decoding the remaining bit symbols of the current transform coefficient; and

processor generator means for processing generating another transform coefficient in accordance with the operations of the first and second decoder means.

90. (Canceled)

91. (Previously Presented) An apparatus as claimed in claim 89, further comprising inverse quantization means for inverse quantizing the transform coefficients.

92. (Previously Presented) An apparatus as claimed in claim 89, wherein the representative number equals the number of leading zero bit symbols.

93. (Previously Presented) An apparatus as claimed in claim 89, wherein said context is determined from an arrangement of surrounding transform coefficients.

94. (Previously Presented) An apparatus as claimed in claim 93, wherein the surrounding transform coefficients are previously decoded transform coefficients.

95. (Canceled)

96. (Currently Amended) An apparatus as claimed in claim 89, wherein [[.]] said second decoder means decodes the remaining bit symbols by copying the remaining bit symbols.

97. (Previously Presented) An apparatus for decompressing data, wherein the data once decompressed comprises a plurality of transform coefficients, and each transform coefficient is expressible in a format comprising a plurality of bit symbols, the apparatus including:

entropy decoder means for entropy decoding an encoded bit symbol of a current transform coefficient based on a context of a number of surrounding bit symbols and on whether or not the most significant bit symbol of the current coefficient has been previously entropy decoded, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient;

repetition means for repeating the operation of the entropy decoder means a redetermined number of times for the current transform coefficient; and

generation means for generating another transform coefficient in accordance with the operation of the entropy decoder means and the repetition means.

98. (Canceled)

99. (Previously Presented) An apparatus as claimed in claim 97, wherein the apparatus includes inverse quantization means for inverse quantizing the transform coefficients.

100. (Canceled)

101. (Previously Presented) An apparatus as claimed in claim 97, wherein said context of surrounding bit symbols includes information as whether or not a most significant bit of at least one transform coefficient spatially adjacent, to the current transform coefficient, is encoded or decoded.

102. (Previously Presented) An apparatus as claimed in claim 97, wherein the transform coefficients are represented in a bit-plane representation and the surrounding bit symbols are bit symbols in a current bit-plane.

103. (Previously Presented) An apparatus as claimed in claim 89, wherein said first decoder means is an arithmetic coder.

104. (Previously Presented) An apparatus as claimed in 89, wherein said apparatus further includes an inverse transform means for inverse Discrete Wavelet Transforming the transform coefficients.

105. (Previously Presented) A computer readable medium comprising a computer program for compressing data, wherein the data comprises a plurality of transform coefficients, and each transform coefficient is expressible in a format including a plurality of bit symbols, the format comprising a number of leading zero bit symbols and remaining bit symbols, the computer program comprising:

first encoder means for entropy encoding a number representative of the number of leading zero bit symbols of a current transform coefficient based on a

context of a number of transform coefficients or part thereof surrounding the current transform coefficient, said context being based on the number of non-zero transform coefficients or part thereof surrounding the current transform coefficient;

second encoder means for encoding the remaining bit symbols of the current transform coefficient; and

processor means for processing another transform coefficient, not previously coded, in accordance with the operations of the first and second encoder means.

106. (Previously Presented) A computer readable medium comprising a computer program for compressing data, wherein the data comprises a plurality of transform coefficients and each transform coefficient is expressible in a format comprising a plurality of bit symbols, the computer program comprising:

entropy encoder means for entropy encoding one of the bit symbols, not previously entropy coded, of a current transform coefficient based on a context of a number of surrounding bit symbols and on whether or not the most significant bit symbol of the current coefficient has been previously entropy encoded, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient;

repetition means for repeating the operation of the entropy encoder a predetermined number of times for the current transform coefficient; and

processor means for processing another transform coefficient in accordance with the operations of the entropy encoder means and repetition means.

107. (Currently Amended) A computer readable medium comprising a computer program for decompressing data, wherein the data once decompressed comprises a plurality of transform coefficients and each transform coefficient is expressible in a format comprising a plurality of bit symbols, the format comprising a number of leading zero bit symbols and remaining bit symbols, the computer program comprising:

first decoder means for entropy decoding an encoded number representative of the number of leading zero bit symbols of a current transform coefficient based on a context of a number of transform coefficients or part thereof surrounding the current coefficient, said context being based on the number of non-zero transform coefficients or part thereof surrounding the current transform coefficient;

second decoder means for decoding the remaining bit symbols of the current transform coefficient; and

processor generator means for processing generating another transform coefficient in accordance with the operations of the first and second decoder means.

108. (Previously Presented) A computer readable medium comprising a computer program for decompressing data, wherein the data once decompressed comprises a plurality of transform coefficients, and each transform coefficient is expressible in a format comprising a plurality of bit symbols, the computer program comprising:

entropy decoder means for entropy decoding an encoded bit symbol of a current transform coefficient based on a context of a number of surrounding bit symbols and on whether the most significant bit symbol of the current coefficient has been

previously entropy decoded, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient;

repetition means for repeating the operation of the entropy decoder means a predetermined number of times for the current transform coefficient; and

generation means for generating another transform coefficient in accordance with the operation of the entropy decoder means and the repetition means.